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ABSTRACT

The relations of the National Program for Library and Information Services to information literacy and the information industry are discussed. Private sector information resources are identified in several categories. The traditional relations of libraries and with the information industry are described, and examples are given of situations where traditional roles of libraries and private sector information activities are in transition. It is suggested that the top priority of the National Commission on Libraries and Information Science should be directed toward establishing a major national program to achieve universal information literacy by 1984. (PF)

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NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE
NATIONAL PROGRAM ON LIBRARY
AND INFORMATION SERVICES

RELATED PAPER
NUMBER FIVE

THE INFORMATION SERVICE ENVIRONMENT
RELATIONSHIPS AND PRIORITIES

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PRESIDENT
INFORMATION INDUSTRY ASSOCIATION

This paper (1) identifies various categories of private sector information resources; (2) identifies categories of industry/library relations of a traditional nature; (3) identifies examples of situations where traditional roles of libraries and private sector information activities are in transition and (4) suggests priorities for implementation of the National Program to facilitate the recognition and maintenance of the mutually supportive roles of industry and libraries.

NOVEMBER, 1974

The views expressed are those of the author and do not necessarily reflect the position or policy of the NCLIS. Though related to the Commission's National Program, papers in this series are not an integral part of the National Program Document.

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I - PROLOGUE

THE GOAL: ACHIEVING INFORMATION LITERACY

Information is not knowledge; it is concepts or ideas which enter a person's field of perception, are evaluated and assimilated reinforcing or changing the individual's concept of reality and/or ability to act. As beauty is in the eye of the beholder, so information is in the mind of the user.

We experience an overabundance of information whenever available information exceeds our capacity to evaluate it. This is a universal condition today for three reasons:

(1) The information seeking procedures of individuals are different at different times for different purposes.

(2) A multiplicity of access routes and sources have arisen in response to this kaleidoseopic approach people take to fulfilling their information needs. These are poorly understood and vastly underutilized.

(3) More and more of the events and artifacts of human existance are being dealt with in information equivalents, requiring retraining of the whole population.

The infrastructure supporting our information service environment transcends traditional libraries, publishers and schools. It embraces the totality of explicit physical means, formal and informal, for communicating concepts and ideas.[1]/

1/ Including but not limited to telephone, television, radio, human voice and action, newspapers, magazines, books, paperbacks, movies, theater, graffitti, pamphlets, maps, tours, audio tapes, schools, door-to-door salesmen, direct mail advertising, computer data bases, newsletters, microform collections, drugstore book and magazine racks, government

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From amongst these activities, information publishing activities, whether publicly or privately funded,[2] can be identified as those devoted to anticipating information interests, filtering information abundance and directing ideas and concepts to specific fields of perception in cost-effective and useful communications media.

Such an information publishing activity can be viewed as a prism. It gathers "light" (ideas and concepts) and performs a variety of "refractory" functions (editing, redacting, printing, microfilming, encoding, arranging, etc.). It produces a spectrum of information products, services and systems designed to correspond to the kaliedoscopic needs of the field of users it purposfully selects to serve. The individual user has many facets and shows different needs to the information sources at different times for different purposes.

Anticipating these changing needs and packaging concepts and ideas to meet them is a major evolving economic activity. (See Figure I). This differs from traditional publishing in significant ways which will be discussed later. (See Figure 2).

Figure I demonstrates that information publishing activities gather data of interest to a specific subject, field or market, produce information

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pamphlets, bookstores, libraries, political campaigns, churches, social clubs, satellite communications, cable television, other broad band communications, cocktail parties, town criers, committees of correspondence, pamphleteers, museums, expositions, etc. Most importantly, however, the infrastructure also includes all of the human skills necessary to the functioning of these physical means, as well as the wide variety of economic structure on which their continued viability depends.

[2] The Information Industry Association (I.I.A.) was established in 1968 and is made up today of more than 70 member companies. The I.I.A. is limited by its charter to commercially chartered, for-profit companies, but the functions of the industry are also performed by non-profit and government agencies. See also Encyclopedia of Library and Information Science, Vol. II Marcel Dekker, Inc., New York, 1974, p. 483 et seq.

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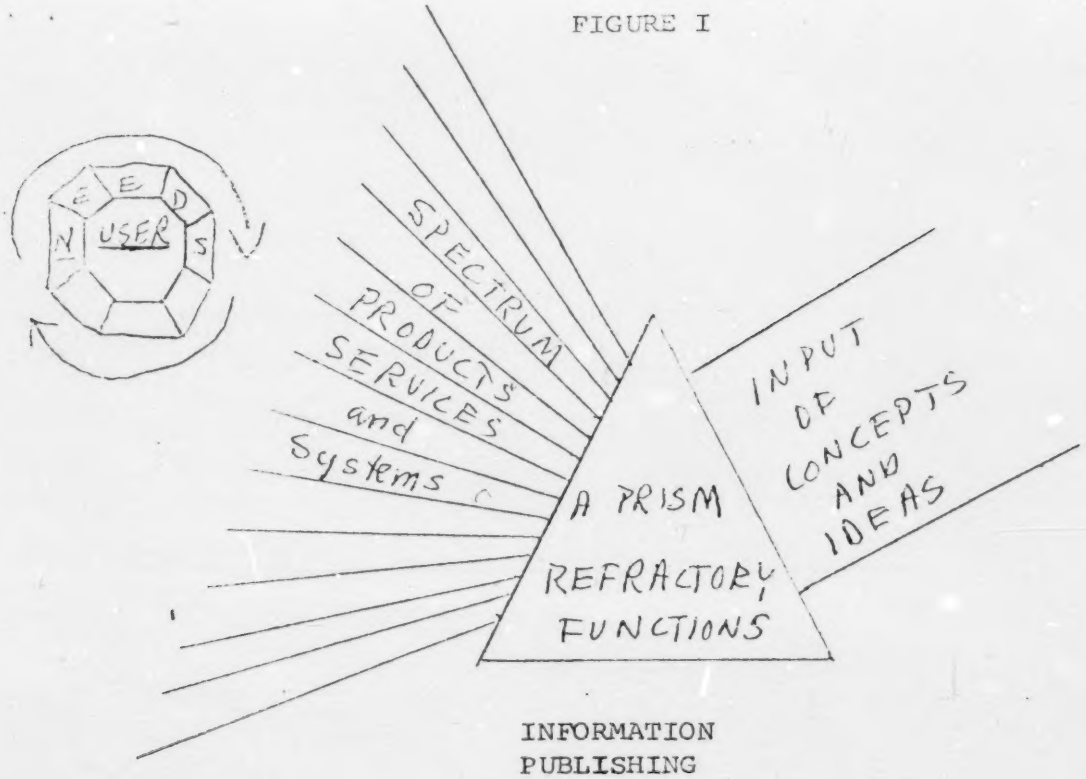
FIGURE I



INFORMATION
PUBLISHING
ACTIVITIES

These include:

A. Information Generation: 1. Original authoring or writing (e.g., NY Times); 2. Compilation (e.g., Dunn and Bradstreet, R.R. Bowker; 3. Recruitment of authors (e.g. Alfred Knopf); and 4. Cataloging, abstracting, and indexing (e.g., any "secondary service" publisher, like Congressional Information Service or H. W. Wilson).

B. Information Publishing: 1. Editing (all of the above); 2. Formating for original publication (all of the above); 3. Formating for republication in another form (e.g., CIS Microfiche Library; The Readers Guide Bantam Books; Lockheed on-line system); 4. Distribution (e.g., Richard Abel; Lockheed; McNaughton Library Service); and 5. Publicizing, marketing, and educating (all of the above).

C. Technology Applications: ("Hardware"): can be applied in the pursuit of any of the above functions; these include such things as dictating machine, microfilm camera or reader, computer composition microwave transmission, printing press, computer storage and retrieval optical character recognition, etc.

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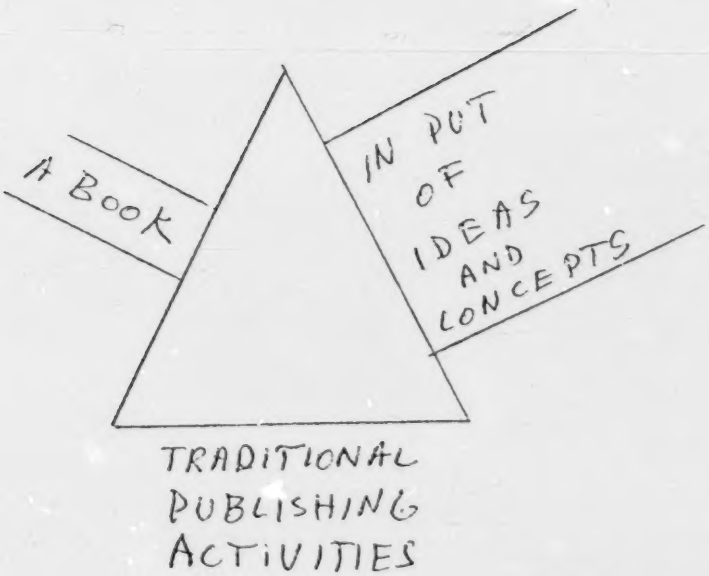
FIGURE 2



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A traditional publisher considers each book an economic entity standing alone. The publisher is successful to the extent that more books succeed than fail. In traditional publishing, the related, parallel portions of the spectrum of products and services which can be derived from the input of ideas and concepts may or may not be recognized and may or may not be marketed.

mation on the intended users expected needs. All of these are labor intensive, intellectually disciplined, costly, risky and capital intensive activities. Their success is measured by the feed-back received from the user.

In a vital marketplace of ideas information publishing activities must enjoy not only the right to succeed but also the right to fail.

In the competitive information marketplace the measure of success is whether a particular enterprise proves to be profitable. The marriage of the profit motive to the distribution of information is the single most important development in the information field since Carnegie began endowing libraries with funds to make information in books and journals more widely available to the public.

Since no one can have a monopoly on ideas and concepts (copyright grants only a limited monopoly in a particular statement of ideas or concepts), competition is keen in identifying ideas and concepts with a high degree of relevance to a particular market or group of users and in bringing these ideas and concepts into the field of perception of that market. If the right decisions are made about (a) the identification of ideas and concepts (b) their documentation or packaging, (c) the intended group of users and (d) pricing, the enterprise will thrive and be profitable. If not, it will fail.

"Precisely because business can make a profit, it must run the risk of loss. The strongest argument for "private enterprise" is not the function of profit. The strongest argument is the function of loss. Because of it business is the most adaptable and the most flexible of institutions around. It is the one that has a clear, even though limited, performance test. It is the one that has a yardstick".[3]

3/ Age of Discontinuity - Peter F. Drucker; Harper & Row, 1969, p. 237 et seq.

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In the government sector no such yardstick exists. Information activities are funded as a value of society. This is a more general standard and one more subject to the laws of inertia.

"One can argue that this or that obselete hospital is really needed in the community or that it will one day again be needed. One can argue that even the poorest university is better than none. The alumni or the community always has a "moral duty" to save 'dear old Siwash'.

"The consumer, however, is unsentimental. It leaves him singularly unmoved to be told that he has a duty to buy the product of a company because it has been around a long time. The consumer always asks: 'And what will the product do for me tomorrow?' If the answer is 'Nothing' he will see its manufacturer disappear without the slightest regret." 4/ Thus, for the user, there is a specific yardstick. Information has value in direct proportion to the control it provides him over what he is and what he can become.

The user is willing to pay for services which enhance his control. Not everyone perceives this as a measure of the value of information. Many who are conscious of the need for information still feel that information, like air, is a free good.

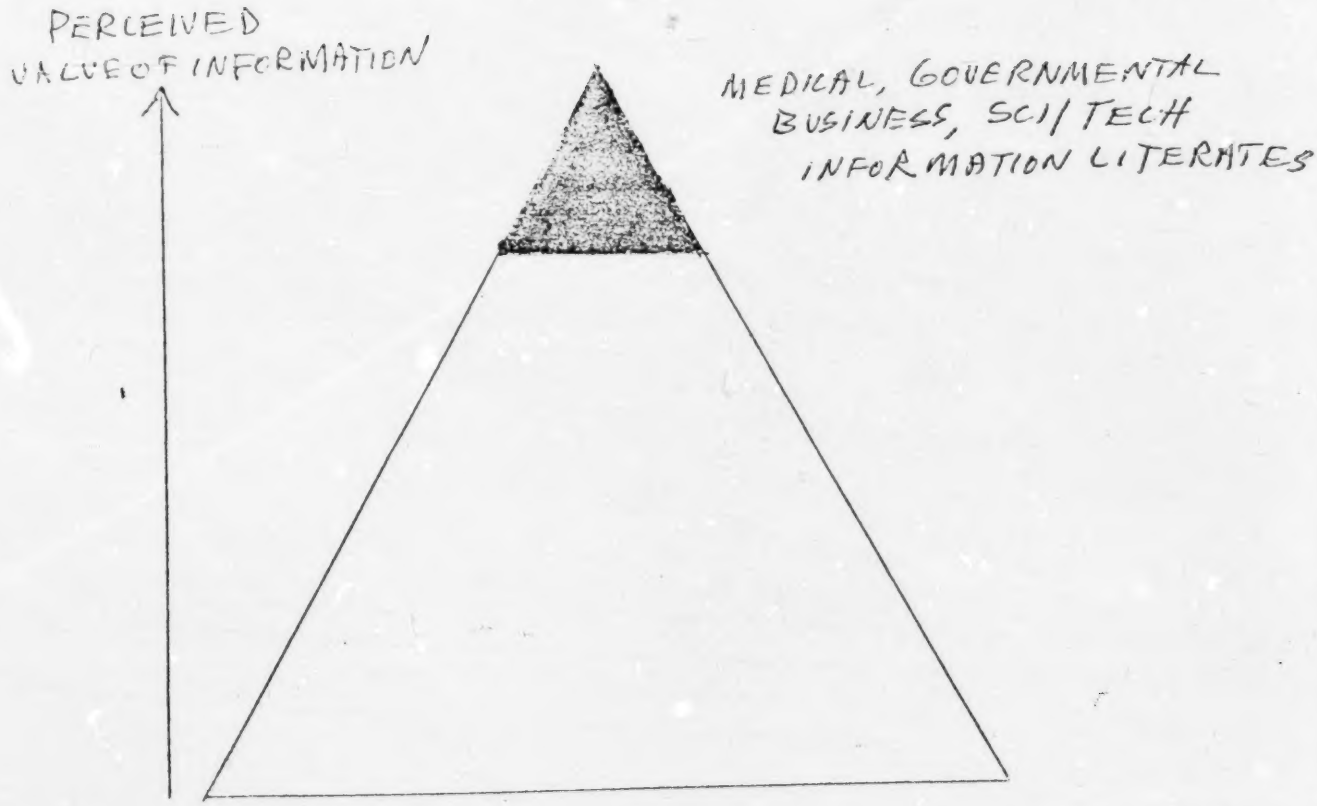
People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information solutions to their problems.

The individuals in the remaining portion of the population, while literate in the sense that they can read and write, do not have a measure for the value of information, do not have an ability to mold information to their needs, and realistically must be considered to be information illiterates.

Figure 3 illustrates the relatively small percentage of people who have attained some degree of information literacy.

4/ The Age of Discontinuity, op. cit.

FIGURE 3



While the population of the U.S. today is nearly 100% literate, only a small portion - perhaps one-sixth, could be characterized as information literates.

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The work of the Commission should be viewed in terms of achieving total information literacy for the nation.

This paper seeks to:

(1) Provide indicators of the broad range of services already being offered by non-government, non-library-based business firms.

(2) Identify the policy questions that need to be resolved in order to maximize the pluralistic structure of the information economy already in place in order to achieve information literacy for our entire population, and

(3) Suggest priorities which the commission should consider in attaining the goal of information literacy.

II - PRIVATE SECTOR INFORMATION RESOURCES

A snapshot of the private sector information resources needs to be taken with an extremely wide angle lens. Having taken the picture it is fairly easy to identify and define categories of services, subject areas covered, and, in some cases, even the intended markets for particular products. Specific categories will be identified and examples cited for each without any expectation that the list will be complete.

It must be noted, however, that each resource cited is but one of a group in a spectrum of services offered by a particular company and its competitors and that for each resource cited there exists, in various stages of development, another spectrum of comparable, related or competitive services (cf Figure 1.).

A. INFORMATION BANKS

The creation of an information bank - a resource people can draw on, is a most capital intensive activity.

The Library of Congress MARC program is one example.

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Others include:

Shepard's Citations - used in law libraries and by individual law firms, based on the arrangement of legal citations to previously decided court cases.

Science Citation Index and Social Science Citation Index [5/] used in research libraries and by individuals, based on an organization of scientific citations in sci/tech literature and social science literature, respectively.

International Data Corporation - monitors the location of computer facilities in the U.S. and elsewhere identifying central processing units and related facts about each facility. Its market is primarily suppliers of computer room equipment services and supplies.

Predicasts, Inc. - a Cleveland based company, monitors the literature of the business world and captures one-line entries on specific articles industries by SIC code numbers to facilitate users seeking information on specific industrial and business fields.

Disclosure, Inc. of Silver Spring, MD., has created a machine readable file of abstracts covering all the corporate reports required to be filed with the Securities and Exchange Commission. The information files are published regularly in inkprint as a form of bibliographic control over the microfilm version of the documents also marketed by Disclosure. The arrangement was achieved through soliciation of competitive sources by SEC that resulted in a no-cost to the government contract. The latest contract renewal included a provision for pilot programs in Dallas and

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[5/] Both are products of the Institute for Scientific Information, Phila.

Nashville where library use of the financial information provided by Disclosure developed new customers for the libraries. Subsequently, these two libraries have subscribed to the Disclosure Service to continue serving their users.

Standard and Poor's - a McGraw-Hill Company, has collected a great deal of detailed income statement and balance sheet data on public companies, data which were not compiled and easily available anywhere else to the public.

The New York Times Information Bank - includes full texts of the informative abstracts written on all articles appearing in the New York Times.

The government subsidized the creation of a wide-range of sci/tech data bases by professional societies. These include Engineering Index, Chemical Abstracts, American Physics Institute and others.

Many of these information banks are marketed respectively by each company in a variety of formats and initially were offered only in ink-print.

There are a dozen companies which have built information banks, in part based on the MARC tapes, offering a multitude of services to libraries. Information Dynamics Corp., Richard Abel & Co., Science Pres., Inc., Brodait, are but a few.

B. INFORMATION BANK VENDORS

The last 18 months has seen the emergence of companies marketing access to machine readable information banks. The function of these companies is to make arrangements to have available for on-line search as many

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information banks as possible. They then seek to develop a dual multiplier effect in marketing access to these banks. The more banks a company has "up" the easier it is to convince a user to install the necessary terminal equipment by which to gain access to the files. Similarily, the more there is to search the more likely it is the searches will be made.

Lockheed Information Systems, Systems Development Corporation and certain time-sharing organizations such as General Electric vend access to multiple information banks stored in their systems based on a variety of lease and user charges.

Lockheed is experimenting with several Northern California libraries under a National Science Foundation grant to determine the feasibility of having libraries serve as "retail" outlets for these search services. Presumably, the cost of these search services would ultimately have to be borne either by the library or its users.

A further innovation both Lockheed and SDC offer their subscribers who perform searches on information files created by the Institute for Scientific Information is the facility to order a tear sheet of any article they obtain a citation on from the system. The orders are stored in the vendor's computer and are "read out" by ISI at the end of the day. Original Article Tear Sheets or authorized photocopies are supplied by ISI by return mail. This arrangement provides one example of how to deal with the threshhold copyright problem, since ISI has established relationships on copyright questions with, and pay royalities to, the publishers of journals cited in its information bank file.

The New York Times Information Bank is unique in that the creator of the Bank is also vending access to it by placing terminals and training

people in their use. The Times is experimenting in Canada with providing individuals access to the files through libraries.

The availability of such services in libraries has numerous side effects:

(1) For information bank creators and vendors who originally designed their service and priced it on a "per-search" basis increased usage in libraries widens the market.

(2) For creators and vendors whose costs have never been subsidized and also serve a narrow market, the ability of users to gain access to the file on a "per-use" basis without paying lease fees charged other users destroys the economic basis of the file and will eventually eliminate its availability or result in severe modification in the file and its marketing procedures.

(3) In some cases where access to the machine readable version requires the use of an ink-print version, library usage will expand markets for both.

(4) In cases where the availability of the machine readable file on a per-use basis is an adequate substitute for the ink-print versions, there is serious cause for concern on the part of the publisher who has an economic activity in ink-print but may lose out if the machine readable file becomes available even on a "per-use" basis in libraries.

C. PUBLISHERS

Libraries are filled with the products of publishers, books, journals, pamphlets, recordings, film strips, microfilm collections. All are economic goods which have been purchased by libraries for the express purpose of lending them to the patrons of the libraries. When these items are out on loan they are off the shelf. If demand increased in the past additional copies were purchased.

In many cases this lending practice created an awareness of the value of the information contained in the materials and often led to individuals

subscribing directly on a personal basis for similar services. In the case of many business information services this led to the development of a whole market for timely services.

Many publishers offer discounts to libraries considering the library a ready market and one requiring lesser marketing expense to reach. Other publishers, primarily of reference and information tools scale their subscription rate to the anticipated number of users expected to have access to their products. In any case, the pricing strategy is designed to generate sufficient revenues from a multitude of sources to make it economic to undertake the creation, manufacture and distribution of a particular product.

A starting point for this strategy is the identification of "first copy costs", or what does it cost to create the first copy? (After one copy is made, the incremental costs of subsequent copies are usually comparatively small.) The economics of publishing requires that all subscribers pay a share of these first copy costs. Since the first copy costs are to be incurred, regardless of the medium used for publication, many journal publishers contend that spreading these over the largest ink-print press run possible is the most cost-effective means of distributing scientific and technical information.

In the field of publishing there also is a relatively new phenomonon called micropublishing, or more correctly microrepublishing, since it almost universally involves republishing ink-print materials, both under copyright and in the public domain, in microform.

Information Handling Services organizes, indexes, and microfilms on

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16 mm cartridge film engineering and construction catalog information. Its contribution is to organize and make readily accessible a large body of otherwise elusive and quickly dated materials.

Congressional Information Service abstracts, indexes and microfilms nearly one-half the total output of the Government Printing Office. Two basic corpura of documents includes all Congressionally generated reports, hearings, bills, etc. (except The Congressional Record which is microrepublished by University Microfilms, Princeton Microfilms and others) and statistical publications of all government agencies. CIS recently began offering a file containing copies of all bills offered in Congress at a price substantially below the product of the Library of Congress it replaced. Its breakeven point is approximately 15 subscribers. (In the information service environment small audiences can be served economically and competitively.)

Readex Microprint republishers the complete output of the Government Printing Office in a micro-opaque medium for which it also offers a reader/printer.

Research Publications, Inc. collects and microfilms large academic collections such as the Papers of The Confederacy and the League of Nations Documents. It also offers a microfilm on all patents issued by The Patent Office and has began filming state documents. It provides detailed indexes with which to use its products.

University Microfilms, has collected U. S. doctoral theses on microfilm and has created a Dissertations Abstracts publication by which to identify relevant theses. It also markets to libraries authorized microfilm versions of most popular periodicals.

Bell and Howell Microphoto microfilms large numbers of newspapers including a whole collection on the underground press.

Greenwood Press micropublishers large collections of a retrospective nature and also offers a service on municipal documents.

Disclosure, Inc., U.S. Historical Documents Institute, Microfilming Corporation of America and Library Resources, also offer a variety of micropublished materials.

This is a relatively new industry dating back only to the years immediately prior to World War 2. It is an industry that has learned that to stay in business it must do more than create on film that which already exists in ink-print; it must add value by what it does. This value most often takes the form of one or all of the following:

(1) Collecting as complete a set as humanly possible from many disparate sources.

(2) Organizing, editing and arranging the material.

(3) Filming and coding the material on film.

(4) Creating tools by which users can locate on the microfilm the precise information they desire promptly and easily.

In many cases the first copy costs of these collections must be spread over a maximum expected sale of 15 to 20 copies.

D. INFORMATION BY-PRODUCTS

These include everything from SDI services to journals, newsletters and other serial products. They might be by-products of an information bank or a micropublishing or publishing venture.

One major business---Dodge Information Systems--a McGraw-Hill Company, fits in this category. The Dodge people serve the construction field. They

have a data base consisting of all construction jobs being undertaken in the U.S. of a certain minimum size. The file contains information such as date bids are due, who was awarded the contract, when various subcontracts will be let, who the subcontractor is and when he is expected to buy light bulbs, etc.

Information is sold out of this file to all kinds of users who wish to compete for the business of supplying materials to builders. This is sold in little pieces of paper on a daily basis, on user pre-printed multiple copy computer forms for use by salesmen and their managers in keeping track of business in a territory, etc.

Obviously, this information gives a salesman great control over who he is and what he can become. It has great value.

Newsletters are another "by-product," but more a by-product of the data base building process than of the completed data base. A newsletter has value because it becomes built into the user's life style. It repeatedly gives him ideas and concepts that are relevant. The newsletter publisher maintains good "feed back" from his users and knows whether what he puts out is used, and, if not, why not, and how to correct it. That is data base building. People who have been doing this for a long time have a natural reserve of information that should be convertible to a data base.

This, in turn, can then be repackaged as books, as SDI, as on-line retrieval information, as complementary data bases to other files also "up" on the same system, etc. While there are data conversion costs involved, the most expensive functions--data acquisition and editing--have been done and paid for. In addition the information has been validated through demonstration and repeated use.

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Information is a non-depleting resource and, in fact, its use enhances its value for users as well as for information publishing companies.

E. INFORMATION EVALUATION

It, too, embraces a multitude of activities. It includes, for example, facilities management, such as the Informatics operation of the NASA Space Information Center, where the world of space-related information is evaluated, managed and distributed. Herner & Co. runs a similar facility for Walter Reed Army Medical Center, concentrating on managing bio-medical research results for the U.S. Army. Aspen Systems has operated more limited facilities for specific task-oriented activities creating an information capability in support of certain inquiries by regulatory agencies of government.

Another example of the information evaluation activities of the industry is the whole phenomenon of "user generated", or custom query "on demand" information companies. A prime example is FIND, operated by Information Clearing House, N. Y. There are probably 20-30 companies of this kind in the U.S. today operating on a commercial basis. There are at least as many operated by government and non-profit ventures as well.

The economic reality giving rise to this business is the multi-disciplinary approach all businesses are forced to take today. Libraries in business locations turn out to have finite personnel and holdings. Rather than augment both and build into their cost structure permanent high levels of activities, many businesses are choosing to rely on the "expert access"

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to information these firms provide. (They serve a similar function to that of the temporary help firms.)

In addition, if one of these on-demand companies has 500 industrial subscribers it probably recognizes that to be a valid statistical sample of the U.S. market for information. If a dozen companies out of those 500 ask about the same question in one week, this triggers certain developments: (1) The question is researched 12 different ways. (2) The researchers identify the fact that this subject probably is of interest to a large number of other companies, both subscribers and non-subscribers. (3) A special report is prepared as a by-product of the earlier research and is sold. (4) The research itself, without regard to the source of the questions, may be used to construct a data base for other users as well.

Also in this information evaluation field is the whole area of special reports such as those created by Frost & Sullivan, Predicasts, Quantum Science, International Data Corporation, Auerbach, Business International, etc. In the sense that specialized (mostly sci/tech) journals also carry evaluated (by peers) information, they too fall in this category.

III - TRADITIONAL LIBRARY/INDUSTRY RELATIONSHIPS

In the age of evolving reading literacy library/industry relations were mutually beneficial.

Libraries were and still are for many companies the principal market for published products. For many products, the existance of a fairly certain library market for a book or journal assured a large press run distributing first copy costs widely and reducing retail prices for indiv-

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iduals as a result.

Libraries with collections of materials and subscriptions to current periodicals also form a market for publishers of reference works and for current awareness services. Both such products rely on the ready availability within the library of a fulfillment capability to complete the current awareness/fulfillment cycle essential to the complete information process.

For newer, innovative products libraries offer the traditional service of training individual users in the use of new products.

IV - TRANSITIONAL LIBRARY/INDUSTRY RELATIONSHIPS

What is characterized in the Report as the threshhold question - copyright - covers a wide range of ways in which the library/industry roles are in transition.

For the journal publisher, interlibrary loans via photocopies represents a reversal of the relationship by which sufficiently large press runs resulted in distributing first copy costs broadly over all or almost all users. Current practice resulting in reduced multiple subscriptions within each library have drastically reduced the number of subscriptions from which first copy costs can be recovered.

The further practice of photocopying portions of journals, thereby eliminating the need for users or satellite or borrowing libraries to subscribe has the following result. (See Figure 4).

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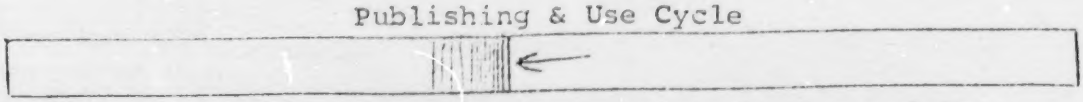

In the publishing and use cycle the major costs are associated with creation and production. Revenues are generated from the distribution and use end. Photocopying, while not generating revenues for libraries, does push the publisher farther and farther back into the cost area and out of distribution and revenue area.

In many situations libraries by marketing their services to commercial users in industrialized locations on a subsidized basis are competing unfairly with firms which must recover capital investment, pay a return on investment (prime rates remain high for venture capital), and pay state and federal taxes. The change represented by this example is one of scale of activity rather than in kind. Often in order to "get a good return for the taxpayers investment in a new information service" libraries will seek to reach out to precisely the same people to whom the private sector is seeking to market similar or even identical services.

Superficially, both are serving the same objective - raising the information literacy of the U.S. population. From an economic standpoint, however, there is a real danger that this kind of unfair competition will destroy the economic viability of the creator of the service involved and his business will fail. Government funding will become the only viable way of creating such information services. By comparison, consider what the

•ng literacy if government funding had been the only viable way of publishing books and journals.

A major feature of transitional library/industry relations, thus, is •that both libraries and information companies are seeking to serve the same users of very specialized services.

This would be further aggravated by the creation of a national system for sharing resources unless ways were clearly defined for achieving optimum utilization of both resources.

Other than photocopying is involved in this area. For a micropublisher of a large academic collection of materials, the sharing among major research libraries of key portions of the microfilmed collections can be fatal to the economic viability of the collection if as much as one of the 5-20 potential sales are lost. A national system of sharing would guarantee that result in every case. Here again specific ways must be found to assure continued viability of multiple sources of materials.

In the case of federal libraries their redesignation as information centers also represents a real threat not only to industry but to the national tax base as well. Many federal information centers offer subsidized information services to an ever widening circle of users - first, other government agencies, then, state agencies, then, government contractors, then, their subcontractors and then on ad infinitum.

Not only does this preempt large markets for direct sales to these same users of information services, but it creates a larger federal bureaucracy and denies tax revenues to both state and federal treasuries.

It is significant that the first Congressional policy statement on

In the depth of a depression, when Congress was cutting its salaries, it is logical that the Congress would recognize the hazards to the tax base of government agency preemption of private sector opportunities.

The size of the impact on tax revenues was set forth in a Department of Commerce table at 60 of the Report of the Commission on Government Procurement. The Commerce Department estimated that in 1970 there were $4 billion of services performed by the government that could have been shifted to the private sector.

The report states this would have produced an additional $25 to $35 million in tax revenues to the states alone. In fiscal 1970 the government agencies reported $7 billion of similar services that were performed in house rather than contracted out. If $5 billion of that had been shifted to the private sector the taxes paid to the U.S. Treasury would have totalled up to $250 million.

V - POLICY QUESTIONS

In the "Reading Service Environment" the basic policy issue: what portion of publishing and library services should be left to be satisfied by operation of the forces of the marketplace and what portion must be subsidized was fairly clearly defined. In fact, the subsidized portion operating by resource sharing aggregated dependable, continuously-funded markets for publishers who, thus, became secondary beneficiaries of the subsidy. Economics of size were assured and a stable, well-balanced system evolved to serve the reading public.

This complex of relationships constituting the Reading Service Environ-

harnessing the nation's pluralistic resources to the task of creating a reading literate society and a competitive marketplace of ideas. In many respects this relationship still pertains and it is in the public interest for all concerned to continue to build on this mutuality of interest in extending information literacy to the all segments of society.

With the introduction of new information processing technologies the line between marketplace and subsidized functions in some respects has become blurred. The process of achieving information literacy involves defining that line clearly and realistically, and in defining an institutional framework for the Information Service Environment. In our age of information overabundance, being information literate means being able to find what is known or knowable on any subject. The tools and techniques and the organizations providing them for doing that form this institutional framework. Three major time tested policies contributed to the success of the Reading Service Envinonment and their application to the Information Service Environment is essential to its successful operation:

1. Individual fulfillment, the advancement of knowledge and the discovering of truth, participation in decision making by all members of society, and achieving an adaptable and stable community depends on a system of freedom of expression. 6/

2. Government should not perform services for citizens which citizens are capable of performing for themselves.

3. Government has a legitimate responsibility for assuring educational opportunities for all.

6/ Thomas I. Emerson, The System of Freedom of Expression, Random House, 1970, p. 3 et seq.

A. THE SYSTEM OF FREEDOM OF EXPRESSION BASIS FOR THE INFORMATION SERVICE ENVIRONMENT

"Congress shall make no law...abridging the freedom of speech or of the press...." First Amendment, U. S. Constitution.

> "A system of freedom of expression * * * is a group of rights assured to individual members of the society to form and hold beliefs and opinions on any subject, and to communicate ideas, opinions and information through any medium * * * from the obverse side it includes the right to hear the views of others and to listen to their version of the facts. * * * the full benefits of the system can be realized only when the individual knows the extent of his rights and has some assurance of protection in exercising them. * * * it does not come naturally to the ordinary citizen, but needs to be learned. It must be restated and reiterated not only for each generation but for each new situation. It leans heavily upon understanding and education, both for the individual and the community as a whole.
>
> "Thus it is clear that the problem of maintaining a system of freedom of expression is one of the most complex any society has to face, self-restraint, self-discipline, and maturity are required. * * * The members of society must be willing to sacrifice individual and short-term advantage for social and long-range goals.
>
> "Second (among legal doctrines supporting a system of freedom of expression) is the utilization and simultaneous restriction of government in regulating conflicts between individuals or groups within the system of free expression; in protecting individuals or groups from non-government interference in the exercise of their right to expression; and in eliminating obstacles to, or affirmatively promoting effective functioning of the system. * * * Development of this concept involves formulating specific rules for mutual accommodation of participants in the system, fairness in allocation of scarce facilities and assurance that the system will be expanded rather than contracted." 7/

The practical policy implications for achieving information literacy of a system of freedom of expression are:

(1) Resource sharing in the Information Service Environment differs by an order of magnitude and has the opposite impact on sources

7/ Thomas I. Emerson, The System of Freedom of Expressing op cit.

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of materials to that which it had in the Reading Service Environment. Instead of aggregating markets for suppliers of materials it disaggregates these markets and denies compensation to suppliers for their services. This destroys the economic foundations of the suppliers and reduces pluralism in choices available to citizens. Systematic photocopying of published materials amounts to republishing and requires copyright clearances. All parties should work together to resolve this threshhold question.

(2) In-house or captive development of systems capability denies the entire (not just the library) community the benefit of competition among suppliers. (Services developed outside the library community can be sold to non-library users and the cost be amortized more broadly.) Services for inter-library cooperation should not be contracted for on a sole source basis. Competitive procurement should be required to obtain competitive bids on the specifically described services desired.

(3) A concommitant of freedom of expression is the need for the user to have confidence in the information source on which he proposes to rely. Subsidization of activities that preempt alternative sources eliminates one base for confidence: Competition among products delivering concepts and ideas.

(4) Individuals require not only the right to speak, but also to be heard. A pluralism of channels for communication must therefore be preserved. This will require restraint on the part of subsidized activities so as not to preempt opportunity or to eliminate channels for communication alternative to subsidized channels.

(5) There must be a clear policy statement favoring alternative

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channels for communication since in its absence the risk capital needed to sustain alternate channels will not be forthcoming. For pluralism to be assured, there must be assurance that the system will be expanded rather than contracted.

B. GOVERNMENT SERVICES

Government should not perform services for its citizens which the citizens are capable of performing themselves. The benefits of this policy are:

(1) That private, competitive services arise to offer citizens a choice of services.

(2) That the private services offered amortize first copy costs against all possible users rather than only those government would serve with its products.

(3) That the tax base is broadened by policies encouraging private initiatives and the investment of private risk capital in the development of capital intensive activities.

(4) That it is more cost-effective for government to rely on private risk capital investments. If one agency requires a service needing $2 million in capital investment, by relying on private risk capital it can reduce its costs to a pro rata share of that cost distributed among all users.

The Government of the U.S. also has the responsibility to assure that the opportunity for private sector initiatives is expanded and not contracted. This should be implemented through policies affecting the procurement policies and competitive activities of the instrumentalities the government chooses to fund to implement its objectives.

Since there currently is no national agency charged with the responsibility for overseeing the formulation, implementation and oversight of government policies in this area, it is all the more important that the

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Commission enunicate a policy identifying goals for government activities in the information service field which will direct the energies of people in government in supportive rather than competitive activities.

C. EDUCATION

Much of what has been stated above pertains to the estimated one-sixth of the U. S. Population that is information literate. The priorities of the Commission should be directed toward facilitating the participation of the pluralistic segments of the Information Service Environment already serving that segment of society. Capital investment by government in developing further resources to serve that share of the population would necessarily come at the expense of the five-sixths of the population that lacks the training to be literate in an information sense.

The top priority of the Commission should be directed toward establishing a major national program to achieve universal information literacy by 1984.

This would involve the coordination and funding of a massive effort to train all citizens in the use of the information tools now available as well as those in the development and testing states. The pattern of growth in this field is well established and should be built upon to expand the overall capability of all U.S. Citizens. Such an effort would necessarily create many new opportunities, some of which would be appropriate to the marketplace and others for subsidy.

Until the population as a whole is prepared to utilize and benefit across the board from the capabilities of the Information Service Environment proposals to create systems serving the elite alone will lack the popular political support needed to obtain the level of government funding suggested in the Report of the Commission.

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